

775 This Week in *Science*

Editorial

777 Mineral Dusts and Radon in Uranium Mines

Letters

779 "Gene-Spliced" Fish Experiments: D. A. POWERS, T. T. CHEN, R. A. DUNHAM ■ Age Structure of Populations: C. E. FINCH AND R. E. RICKLEFS ■ Conservation of Hybrid Plants: T. G. WHITHAM, P. A. MORROW, B. M. POTTS

ScienceScope

787 DOE budget battles endanger SLAC; forestry research puts down roots; etc.

News & Comment

788 Indirect Costs; Round II A Tour Through the Indirect Cost Labyrinth  
790 Famine: Blame Policy, Not Nature  
791 Patriot's Effectiveness Challenged  
Congress Approves \$9 Billion for NIH  
792 NIH Unveils Plan for Women's Health Project  
793 Yohkoh Captures a Solar Flare  
Hunger Strike at Kamchatka Institute  
794 Synchrotron Light: The Third Generation ■ The Biggest and the Brightest  
796 *Briefings*: Minorities Need More Nurture ■ Biotech Rollercoaster ■ Gloomy Words From Soviet Physicist ■ New Canadian Medical Head ■ Eccentric Science ■ Relief for Cat Persons? ■ Toxic Waste Program Lacks Science Base

Research News

798 Clue Found to T Cell Loss in AIDS ■ Autoimmunity Explored in AIDS Pathology  
800 When Diamonds Met Buckyballs  
801 NMDA Receptor Cloned—Twice!  
802 Ancient Rocks, Rhythms in Mud, a Topsy Venus: Pushing Plate Tectonics Back a Billion Years ■ Ocean Mud Pins Down a Million Years of Time ■ Magellan Finds a Flock of Venusian Volcanoes  
804 Saving Seeds for Future Generations  
805 GRAIL Seeks Out Genes Buried in DNA Sequence

Articles

811 Myths and Realities of U.S. Competitiveness: P. A. KRUGMAN  
815 Molecular Basis of Latency in Pathogenic Human Viruses: M. A. GARCIA-BLANCO AND B. R. CULLEN

Research Article

821 Dimerization of the Extracellular Domain of the Human Growth Hormone Receptor by a Single Hormone Molecule: B. C. CUNNINGHAM, M. ULTSCH, A. M. DE VOS, M. G. MULKERRIN, K. R. CLAUSER, J. A. WELLS

Reports

826 Superconductivity at 45 K in Rb/Tl Codoped C<sub>60</sub> and C<sub>60</sub>/C<sub>70</sub> Mixtures: Z. IQBAL, R. H. BAUGHMAN, B. L. RAMAKRISHNA, S. KHARE, N. S. MURTHY, H. J. BORNEMANN, D. E. MORRIS

- SCIENCE (ISSN 0036-8075) is published weekly on Friday, except the last week in December, by the American Association for the Advancement of Science, 1333 H Street, NW, Washington, DC 20005. Second-class postage (publication No. 484460) paid at Washington, DC, and additional mailing offices. Copyright © 1991 by the American Association for the Advancement of Science. The title SCIENCE is a registered trademark of the AAAS. Domestic individual membership and subscription (51 issues): \$82 (\$47 allocated to subscription). Domestic institutional subscription (51 issues): \$150. Foreign postage extra: Mexico, Caribbean (surface mail) \$50; Other countries (air assist delivery) \$95. First class, airmail, student and emeritus rates on request. Canadian rates with GST available upon request, GST #1254 88122. Change of address: allow 6 weeks, giving old and new addresses and 11-digit account number. Postmaster: Send change of address to Science, P.O. Box 2033, Marion, OH 43305-2003. Single copy sales: \$6.00 per issue prepaid includes surface postage; Guide to Biotechnology Products and Instruments, \$20. Bulk rates on request. Authorization to photocopy material for internal or personal use under circumstances not falling within the fair use provisions of the Copyright Act is granted by AAAS to libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that the base fee of \$1 per copy plus \$0.10 per page is paid directly to CCC, 27 Congress Street, Salem, Massachusetts 01970. The identification code for Science is 0036-8075/83 \$1 + .10. Science is indexed in the Reader's Guide to Periodical Literature and in several specialized indexes.
- The American Association for the Advancement of Science was founded in 1848 and incorporated in 1874. Its objectives are to further the work of scientists, to facilitate cooperation among them, to foster scientific freedom and responsibility, to improve the effectiveness of science in the promotion of human welfare, to advance education in science, and to increase public understanding and appreciation of the importance and promise of the methods of science in human progress.



**COVER** Plant lectins, such as the one isolated from the red-flowered *Erythrina corallodendron* tree, agglutinate erythrocytes and serve as a paradigm for protein-carbohydrate interactions at cell surfaces. The unusual quaternary structure of the *E. corallodendron* lectin demonstrates the extreme effect of glycosylation on protein assembly. See page 862. [Photo of the *E. corallodendron* bloom by the Photographic Laboratory, Weizmann Institute; photo of the lectin model by W. Randolph, National Institutes of Health]

- 829 Liquids at Large Negative Pressures: Water at the Homogeneous Nucleation Limit: Q. ZHENG, D. J. DURBEN, G. H. WOLF, C. A. ANGELL
- 832 Ice Flexure Forced by Internal Wave Packets in the Arctic Ocean: P. V. CZIPOTT, M. D. LEVINE, C. A. PAULSON, D. MENEMENLIS, D. M. FARMER, R. G. WILLIAMS
- 835 Sudden Extinction of the Dinosaurs: Latest Cretaceous, Upper Great Plains, U.S.A.: P. M. SHEEHAN, D. E. FASTOVSKY, R. G. HOFFMANN, C. B. BERGHAUS, D. L. GABRIEL
- 839 Structural Control of Flank Volcanism in Continental Rifts: M. ELLIS AND G. KING
- 842 Theoretical Fermi-Surface Properties and Superconducting Parameters for  $K_3C_{60}$ : S. C. ERWIN AND W. E. PICKETT
- 845 Modulation of the Affinity of Integrin  $\alpha_{IIb}\beta_3$  (GPIIb-IIIa) by the Cytoplasmic Domain of  $\alpha_{IIb}$ : T. E. O'TOOLE, D. MANDELMAN, J. FORSYTH, S. J. SHATTIL, E. F. PLOW, M. H. GINSBERG
- 847 Mechanism for Regulating Cell Surface Distribution of  $Na^+, K^+$ -ATPase in Polarized Epithelial Cells: R. W. HAMMERTON, K. A. KRZEMINSKI, R. W. MAYS, T. A. RYAN, D. A. WOLLNER, W. J. NELSON
- 850 Activation of a Small GTP-Binding Protein by Nucleoside Diphosphate Kinase: P. A. RANDAZZO, J. K. NORTHUP, R. A. KAHN
- 853 Long-Range Structure in Ribonuclease P RNA: E. S. HAAS, D. P. MORSE, J. W. BROWN, F. J. SCHMIDT, N. R. PACE
- 856 Antibody-Mediated Clearance of Alphavirus Infection from Neurons: B. LEVINE, J. M. HARDWICK, B. D. TRAPP, T. O. CRAWFORD, R. C. BOLLINGER, D. E. GRIFFIN
- 860 Selective Depletion in HIV Infection of T Cells That Bear Specific T Cell Receptor  $V_\beta$  Sequences: L. IMBERTI, A. SOTTINI, A. BETTINARDI, M. PUOTI, D. PRIMI
- 862 Structure of a Legume Lectin with an Ordered N-linked Carbohydrate in Complex with Lactose: B. SHAANAN, H. LIS, N. SHARON
- 866 A Phosphorylation Site in the  $Na^+$  Channel Required for Modulation by Protein Kinase C: J. W. WEST, R. NUMANN, B. J. MURPHY, T. SCHEUER, W. A. CATTERALL

## Book Reviews

- 871 International Science and National Scientific Identity, reviewed by D. OLDROYD ■ Scientists in the Third World, J. HURLEY ■ Dung Beetle Ecology, B. HEINRICH ■ Heterochrony, P. MABEE ■ Books Received

## Products & Materials

- 878 Ligand Binding Software ■ Microtube Mixer ■ Oligonucleotide Purification Kit ■ Miniature Materials Tester ■ Anti-Virus Software ■ Automated Cell and Protein Separations ■ Monoclonal Antibodies ■ Literature

### Board of Directors

Donald N. Langenberg  
Retiring President,  
Chairman

Leon M. Lederman  
President

F. Sherwood Rowland  
President-elect

Mary Ellen Avery  
Francisco J. Ayala  
Eugene H. Cota-Robles  
Robert A. Frosch  
Joseph G. Gavin, Jr.  
Florence P. Haseltine  
Jean'ne M. Shreeve  
Warren M. Washington

William T. Golden  
Treasurer

Richard S. Nicholson  
Executive Officer

### Editorial Board

Charles J. Arntzen  
Elizabeth E. Bailey  
David Baltimore  
William F. Brinkman  
E. Margaret Burbidge  
Pierre-Gilles de Gennes  
Joseph L. Goldstein  
Mary L. Good  
Harry B. Gray  
John J. Hopfield  
F. Clark Howell  
Paul A. Marks  
Yasutomi Nishizuka  
Helen M. Ranney  
Robert M. Solow  
Edward C. Stone  
James D. Watson

### Board of Reviewing Editors

John Abelson  
Frederick W. Alt  
Don L. Anderson  
Stephen J. Benkovic  
David E. Bloom  
Floyd E. Bloom  
Henry R. Bourne  
James J. Bull  
Kathryn Calame  
Charles R. Cantor  
C. Thomas Caskey  
Dennis W. Choi  
Ralph J. Cicerone  
John M. Coffin  
Bruce F. Eldridge  
Paul T. Englund  
Fredric S. Fay

Douglas T. Fearon  
Harry A. Fozzard  
Victor R. Fuchs  
Theodore H. Geballe  
Margaret J. Geller  
Roger I. M. Glass  
Stephen P. Goff  
Corey S. Goodman  
Stephen J. Gould  
Ira Herskowitz  
Eric F. Johnson  
Stephen M. Kosslyn  
Konrad B. Krauskopf  
Charles S. Levings III  
Harvey F. Lodish  
Richard Losick  
Anthony R. Means  
Mortimer Mishkin  
Roger A. Nicoll  
William H. Orme-Johnson III

Stuart L. Pimm  
Yeshayau Pocker  
Dennis A. Powers  
Ralph S. Quatrano  
Erkki Ruoslahti  
Thomas W. Schoener  
Ronald H. Schwartz  
Terrence J. Sejnowski  
Thomas A. Steitz  
Richard F. Thompson  
Robert T. N. Tjian  
Emil R. Unanue  
Geerat J. Vermeij  
Bert Vogelstein  
Harold Weintraub  
Zena Werb  
George M. Whitesides  
Owen N. Witte  
William B. Wood  
Keith Yamamoto

# Science

**254 (5033)**

*Science* **254** (5033), 775-878.

ARTICLE TOOLS

<http://science.sciencemag.org/content/254/5033>

PERMISSIONS

<http://www.sciencemag.org/help/reprints-and-permissions>

Use of this article is subject to the [Terms of Service](#)

---

*Science* (print ISSN 0036-8075; online ISSN 1095-9203) is published by the American Association for the Advancement of Science, 1200 New York Avenue NW, Washington, DC 20005. 2017 © The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works. The title *Science* is a registered trademark of AAAS.